

Claims

1-8 Canceled

9. (New) An integrated circuit arrangement for safety-critical applications, for controlling tasks in an electronic brake system for motor vehicles, comprising:

a plurality of electronic, cooperating functional groups (25, 25'); and

a plurality of electric lines (30) provided to interconnect the functional groups (25, 25'), wherein the functional groups includes groups of a first type and second type, with the functional groups of the first type comprising a functional group redundant microprocessor system (1) and the functional group input/output devices (19), and the functional groups of the second type comprising the functional groups actuator drivers (11, 15, 24, 35) and safety circuits (5, 5', 7, 7'), and with the functional groups of the first type and the second type being grouped on a joint chip or chip support member (23).
10. (New) The integrated circuit arrangement according to claim 9, wherein the redundant microprocessor system is a core-redundant microcontroller system or a microcontroller system with a symmetrical redundancy or a microcontroller system with asymmetrical redundancy.
11. (New) The integrated circuit arrangement according to claim 9, wherein the functional groups are protected against one another at least partly by isolated areas, wherein the isolated areas are doped guard rings or etched barriers such as trenches or deep trenches.
12. (New) The integrated circuit arrangement according to claim 9, wherein the electric lines (30) leading from a first functional group (25) to a second functional group (25') are protected by at least one of buffer element(s) (28) or ESD protective structures (29, 29') against fault-producing events of the neighboring functional

group(s) and/or against fault-producing outside influences.

13. (New) The integrated circuit arrangement according to claim 12, wherein the electric lines include the buffer element or the ESD protective structure on at least one or on each side of an isolated area.
14. (New) The integrated circuit arrangement according to claim 9, wherein the microprocessor system cross-links the functional groups of the first type, which comprise substantially digital circuit components, and the functional groups of the second type, which substantially comprise analog circuit components for actuating efficient consumers, and in particular the safety circuits in such a fashion that individual safety monitoring of the single functional groups is rendered possible.
15. (New) The integrated circuit arrangement according to claim 9, wherein part of the functional groups is redundantly designed two times or more times (5, 5'), and in the event of malfunction of the redundantly designed functional group (5), another equal functional group (5') assumes the function of the faulty functional group, and signal lines (37, 38) and logic components (34) are provided for this purpose which either cause disabling of the faulty function (fault silent) or ensure switch-over of the function to the faultlessly functioning functional group (5') (fault tolerant).
16. (New) The integrated circuit arrangement according to claim 9, wherein circuit arrangement is provided in electronic brake systems for motor vehicles or in electronic control systems for governing driving dynamics of motor vehicles, or for controlling electronically controlled parking brakes, or for controlling vehicle restraint systems such as airbag controls.